

Synthesis and Characterization of Pore Engineered SBA-16 Mesoporous Silicas

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Thick walled and big BET surface area cage like cubic mesoporous silica material SBA-16 have been synthesized by Pluronic F127 and modifiers such as D-glucose and mesitylene via microwave irradiation under strong acidic condition. Their ordered mesostructures were characterized by X-ray diffraction patterns, transmission electron microscopy, and nitrogen sorption analysis. The mesoscopic ordering of SBA-16 can be improved by the addition of suitable amount of co-surfactants, such as d-glucose and mesitylene. It is shown that the BET surface area enlarged from 421.7 to 908 cm²/g and wall was thickened from 7 to 10nm.